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TO: Examiner Ebenezer O. Sackey

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FROM: Richard H. Anderson

RE: USSN: 10/786,793-Conf#3775 - Our Ref.: 27702/10059 US

PAGES (INCLUDING THIS PAGE): 3

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Examiner Sackey,

Attached are the requested replacement pages 9 and 14 for the above-identified patent application.

For: Richard H. Anderson
by Jonathan Goodman, Ph.D.

If you do not receive all pages of this fax in good condition, please contact Lillian Ruiz-Orellana at (312) 474-6300.

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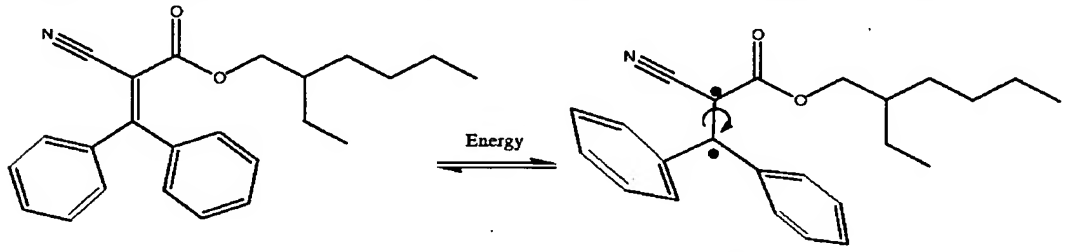
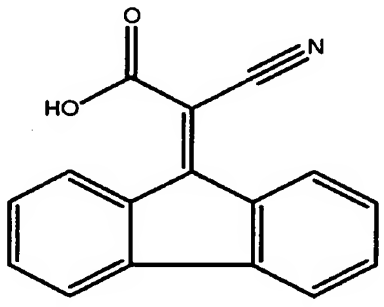
commonly assigned U.S. Patent Application Nos. 10/241,388, 10/361,223, and 10/785,271 (now US Patent No. 6,899,866). Without intending to be limited to any particular mechanism by which an α-cyano-β,β-diphenylacrylate compound is able to quench the excited state of photoactive compound, it is theorized that the α-cyano-β,β-diphenylacrylate compound accepts the excited state energy and dissipates the energy kinetically in the form of rapid isomerizations. This process is shown below:



A A*

wherein the α-cyano-β,β-diphenylacrylate compound (octocrylene shown above as structure A), accepts the triplet excited state energy from a photoactive compound and forms a diradical (shown above as structure A*) at the α and β positions of the acrylate, which converts the double bond into a single bond and allows for the free rotation of the phenyl groups. This rotation occurs rapidly and efficiently to dissipate any excited state energy accepted by the α-cyano-β,β-diphenylacrylate compound from the photoactive compound. In solution (*e.g.*, a sunscreen composition), a key limitation on the ability of a compound to photostabilize another compound is the ability of the two compounds to come into contact with one another.

The general structure of a fluorene moiety (cyano(9H-fluoren-9-ylidene)acetic acid) is shown below:



to the polymer backbone. Also disclosed herein is a method of waterproofing a material by forming a film on a surface of a material, wherein the film includes a polymer containing one or more of crylene and/or fluorene moieties attached to the polymer.

A photoactive compound can be considered stable when, for example, after 30 MED irradiation the photoactive compound has retained at least about 90% of its original absorbance at a wavelength, or over a range of wavelengths of interest (*e.g.*, the wavelength at which a photoactive compound has a peak absorbance, such as 350-370 nm for avobenzone). Likewise, a sunscreen composition can include a plurality of photoactive compounds and a sunscreen composition, as a whole, can be considered stable when, for example, after 30 MED irradiation the sunscreen composition has retained at least about 90% of its original absorbance at one or more wavelengths of interest (*e.g.*, at or near the peak absorbance wavelength of the primary photoactive compound).

In commonly assigned U.S. Patent Application Nos. 10/241,388, 10/361,223, and 10/785,271 (now US Patent No. 6,899,866), the disclosures of which are hereby incorporated by reference, it was found that the addition of an α-cyano-β,β-diphenylacrylate compound and a diester or polyester of naphthalene dicarboxylic acid were able to stabilize a photounstable UV-absorbing compound, *e.g.*, a dibenzoylmethane derivative, such as PARSOL 1789, in a sunscreen composition. It has surprisingly been found that sunscreen compositions containing a combination of (1) a polymer containing one or more crylene and/or fluorene moieties covalently bonded to the polymer backbone, and (2) a diester or polyester of naphthalene dicarboxylic acid can significantly increase the photostability of any photounstable component(s) present therein (*e.g.*, a dibenzoylmethane derivative). Without intending to be limited to any particular mechanism of achieving this increase in photostability, it is believed that a diester or polyester of naphthalene dicarboxylic acid stabilizes a dibenzoylmethane derivative by accepting the triplet energy of the dibenzoylmethane derivative once the dibenzoylmethane derivative has reached an excited state as a result of the absorption of ultra-violet light. Once a dibenzoylmethane derivative is excited, it is prone to degrade according to a number